

1600

RAW SEQUENCE LISTING DATE: 07/11/2002 PATENT APPLICATION: US/09/687,230A TIME: 13:27:28

Input Set : A:\EP.txt

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3 <110> APPLICANT: Braselmann, Sylvia 5 <120> TITLE OF INVENTION: Nucleotide Sequences that Encode Phosphatidylinositol-3' Kinase Associated Proteins and Uses Thereof 8 <130> FILE REFERENCE: ONYX1027-DIV1 10 <140> CURRENT APPLICATION NUMBER: US 09/687,230A 11 <141> CURRENT FILING DATE: 2000-10-13 13 <150> PRIOR APPLICATION NUMBER: US 08/942,008 14 <151> PRIOR FILING DATE: 1997-10-01 16 <150> PRIOR APPLICATION NUMBER: US 60/030,103 17 <151> PRIOR FILING DATE: 1996-11-01 19 <160> NUMBER OF SEQ ID NOS: 3 21 <170> SOFTWARE: PatentIn version 3.1 23 <210> SEO ID NO: 1 24 <211> LENGTH: 2307 25 <212> TYPE: DNA 26 <213> ORGANISM: Phosphatidylinositol-3' Kinase 28 <220> FEATURE: 29 <221> NAME/KEY: CDS 30 <222> LOCATION: (162)..(1928) 31 <223> OTHER INFORMATION: 34 <400> SEQUENCE: 1 35 ctcgaggggc atcgcgccgc ccggcgcgcg ccgccccct gcctcgcggc gcggggtctc 60 37 gegggeeeeg etecegeeet eegetegeet ggeeeggaee ggaageggeg eegeaeggee 120 39 tgggcctggc gcggggggcg ggcaccgggg cccggtcgga c atg ggc aag aag cac 176 40 Met Gly Lys Lys His 41 224 43 aaq aaq cac aaq tcq qac aaa cac ctc tac gag gag tat gta gag aag 44 Lys Lys His Lys Ser Asp Lys His Leu Tyr Glu Glu Tyr Val Glu Lys 15 45 10 272 47 ccc ttg aag ctg gtc ctc aaa gta gga ggg aac gaa gtc acc gaa ctc 48 Pro Leu Lys Leu Val Leu Lys Val Gly Gly Asn Glu Val Thr Glu Leu 51 tee acq gge age teg ggg cae gae tee age ete tte gaa gae aaa aac 320 52 Ser Thr Gly Ser Ser Gly His Asp Ser Ser Leu Phe Glu Asp Lys Asn 45 55 gat cat gac aaa cac aag gac aga aag cgg aaa aag aga aag aaa gga 368 56 Asp His Asp Lys His Lys Asp Arg Lys Arg Lys Arg Lys Lys Gly 60 416 60 Glu Lys Gln Ile Pro Gly Glu Glu Lys Gly Arg Lys Arg Arg Arg Val 75 80 63 aag gag gat aaa aag aag cga gat cga gac cgg gtg gag aat gag gca 464 64 Lys Glu Asp Lys Lys Lys Arg Asp Arg Asp Arg Val Glu Asn Glu Ala

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Input Set : A:\EP.txt

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69				105			+ a+		110	222	022	a a a	a a a		αaa	cad	560
71	gag	aag	CCT	ctc	aca	agc	Con	LLa	312	aaa Ta	Cla	Clu	Clu	y La Val	Clu	Cln	300
	GLu	Lys		Leu	Tnr	ser			Ald	гуѕ	GIII	GIU	130	val	GIU	GIII	
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	Thr		Leu	Gln	Glu	Ala		ASN	GIN	ьeu	мес		GIII	Leu	GIII	ALY	•
77		135					140					145	~ n +	+++	2++	aat	656
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	150					155					160	+	+++	~~+	200		704
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99	aaa	att	ctt	agc	cag	gaa	aga	att	cag	agc	ctg	aag	cag	agc	ata	qac	896
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	_		e Leu	ı Ser	Gln			Ile	Gln	Sei	: Leu	Lys	Glr	ser	: Ile	Asp	
	1 230)				235			Gln		Leu 240	Lys)	s Glr	ı Ser	: Ile	245	0.4.4
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10 10	1 230 3 tto 4 Phe) c atq	g gct	. gac	ttg Leu	235 cag Gln	aaa	act	Gln cga	aag Lys	Leu 240 g cag g Gln	Lys) , aaa	Glr a gat	ser gga	Tle a aca Thr	245 gac Asp	944
10 10 10	1 230 3 tto 4 Phe 5) c atq e Me	g gct t Ala	gac Asp	ttg Leu 250	235 cag Gln	aaa Lys	act Thr	Gln . cga . Arg	aag Lys 255	Leu 240 g cag Glr	Lys) , aaa Lys	Glr a gat s Asp	ser gga Gly	a aca Thr 260	245 gac Asp	
10 10 10 10	1 230 3 tto 4 Phe 5 7 aco) c atq e Med	g get E Ala	gac Asp gagt	ttg Leu 250	235 cag Gln gag	aaa Lys	act Thr	gln cga Arg	aag Lys 255	Leu 240 g cag g Glr 6 c tgg	Lys aaa Lys	Glr gat Asp gaga	ser gga Gly	a aca Thr 260 g aga	245 gac Asp	9 44 992
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10 10 10 10 10 10	1 230 3 tto 4 Phe 5 7 aco 8 Tho 9	o ato	g get t Ala a caq r Gli	gac a Asp g agt n Ser 265 a gat	ttg Leu 250 ggg Gly	235 cag Gln gag Glu gaa	aaa Lys gac Asp	act Thr gga Gly	ggc ggc ggc ggc gcc	aag Lys 255 tgc Cys	Leu 240 g cag g Gln g tgg s Trp	Lys aaa Lys Cag Glr	gata gata Asp gaga gaga gaga gaga	gga Gly a gag Glu 275 c ago	Thrace The 260 again Arg	Asp 245 gac Asp gag Glu	
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10 10 10 10 10 11 11 11	11 230 3 ttc 4 Phe 5 7 acc 8 Thi 9 1 gac 2 Asi 3 5 aat	o atomorphic to a tomorphic tomorphi	g get t Ala a cag r Gli t gga t Gly 280 a aag	gac a Asp g agt Ser 265 a gat y Asp	ttg Leu 250 ggg Gly Gly Ala	235 cag Gln gag Glu gaa Glu aaa	aaaa Lys gac Asp gca Ala	act Thr gga Gly cac His 285	ggc ggc Gly 270 gcc Ala	aag Lys 255 tgc Cys	Leu 240 cag	Lys aaa Lys Cag Glr agt Ser	gata gata Asp aga Arg Pro	gga gga gga gag gGlu 275 agc agc Ser	Thrace Th	Asp 245 gac Asp gag Glu gaa Glu	992
10 10 10 10 10 11 11 11 11	1 230 3 tto 4 Phe 5 7 acc 8 Thi 9 1 gao 2 Asp 3 5 aat 6 Asi	c atom Ser to Ser taaa Lys	g got t Ala a caq r Gli t gga r Gly 280 a aaq s Lys	gac a Asp g agt Ser 265 a gat y Asp	ttg Leu 250 ggg Gly Gly Ala	235 cag Gln gag Glu gaa Glu aaa	aaaa Lys gac Asp gca Ala gat	act Thr gga Gly cac His 285 atg	ggc ggc Gly 270 gcc Ala	aag Lys 255 tgc Cys	Leu 240 cag	Lys aaa Lys cag Glr agt Ser aag	gata gata aga aga aga ara ara ara ara ara ara ar	gga gga gga gag gGlu 275 agc agc Ser	Thrace Th	Asp 245 gac Asp gag Glu gaa Glu	992
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10 10 10 10 10 11 11 11 11 11	1 230 3 tto 4 Phe 5 7 aco 8 Thr 9 1 gao 2 Asr 3 aat 6 Asr 7	e atomore to a control of the contro	g gct t Ala a cag r Gli t gga r Gly 280 a aag s Lys	gac a Asp gagt Ser 265 a gat y Asp) aaa s Lys	ttg Leu 250 ggg Gly	235 cag Glm gag Glu gaa Glu aaaa Lys	aaaa Lys gac Asp gca Ala gat Asp 300	act Thr gga Gly cac His 285 atg	ggc Gly 270 Gly 270 Gc GAla Ctt	aag Lys 255 tgc Cys ttc Phe	Leu 240 240 cag	Lys Jaaa Jaaa Jaaa Jaaa Jaaa Jagta	gates Aspaga again Argonal Concernia Proceedings Photosocial Concernia Photosocial Photos	gga gga gga gga gga gga gga gga ga aaa b sea Lys	Thrace Th	Asp 245 gac Asp Glu gaa Glu aat Asn	992
10 10 10 10 10 11 11 11 11 11 11 11	1 230 3 tto 4 Phe 5 7 acce 8 Thi 9 1 gac 2 Asi 5 aat 6 Asi 7 9 aat 0 Asi	c atomic to a tomic series and Lyse tomic to a tomic series and Lyse tomic series and Ly	g gct t Ala a cag r Gli t gga r Gly 280 a aag s Lys	gac a Asp gagt Ser 265 a gat y Asp) aaa s Lys	ttg Leu 250 ggg Gly	235 cag Glm gag Glu gaa Glu aaa Lys cag	gac Asp Ala Ala Asp 300 gag	act Thr gga Gly cac His 285 atg	ggc Gly 270 Gly 270 Gc GAla Ctt	aag Lys 255 tgc Cys ttc Phe	Leu 240 cag	Lys Jaaa	gates Aspaga again Argonal Concernia Proceedings Photosocial Concernia Photosocial Photos	gga gga gga gga gga gga gga gga ga aaa b sea Lys	Thrace Th	Asp 245 gac Asp gag Glu gaa Glu aat Asn	992 1040 1088
10 10 10 10 10 10 11 11 11 11 11 11 12 12	1 230 3 tto 4 Phe 5 7 acc 8 Thi 9 1 gac 2 Asi 3 aat 6 Asi 7 9 aat 0 Asi 1 310	c atomore Ment and Lys 29! t ttan Les	g gct L Ala cag r Gli 280 a aag s Lys a gag I Gli	gac a Asp gagt Ser 265 a gat y Asp daaa Lys gaga aga	ttg Leu 250 ggg Gly Gly Ala gac Asp	235 cag Glm gag Glu gaa Glu aaa Lys Gln 315	aaaa Lys gac Asp Ala Ala 300 gag	act Thr gga Gly cac His 285 atg Met	ggc ggc Gly 270 gcc Ala ctt	aag 255 tgc Cys ttc Phe gaa Glu	Leu 240 240 cag Glr Glr Trp aag Lys a gat Asp 2 cgc Arg 320	Lys Jaaa	gates Aspaga again Argonal Cooperator 290 tttt	gga gga gga gga gga gga gga sei b aaa b Lys	a aca 7 Thr 260 aga Arg Lys a ago Ser Glu	Asp 245 1 gac Asp 1 gag 1 Glu 2 gaa 3 Glu 2 aat 2 Asn 1 tct 3 Ser 3 25	992 1040 1088 1136
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10 10 10 10 10 11 11 11 11 11 12 12 12 12	1 230 3 tto 4 Phe 5 7 acc 8 Thi 9 1 gac 2 Asi 5 aai 6 Asi 7 9 aai 0 Asi 1 310 3 gga 4 Gly 5	c toa ser	g get t Ala a caq r Gli 280 a aaq s Lys 5 a gaq u Gli a aaq y Lys	gac Asp gagt Ser 265 agat (Asp) aaa s Lys gaga t Arg	ttg Leu 250 ggg Gly Ala gac Asp Glu Thr 330	235 cag Glm gag Glu gaa Glu aaa Lys cag 315 agg	gac Asp Asp Ala Asp 300 gag Glu Glu	act Thr gga Gly cac His 285 atg Met	ggc Gly 270 gcc Ala Ctt Leu gtg Val	aac 255 tgc Cys ttc Phe Glu Asr aac Asr	Leur 240 g cag g c	Lys g aaa g cag g cag g agt s Sen c aag Lys 305 c atc f Glr	a gat aga aga aga aga aga aga aga aga ag	gga gga g Glu 275 a aga Sen) a aaa Lys g aaga g Lys	a aca y Thr 260 aga ar Argo aaaa C Lys a agc Ser Glu attt	Asp 245 gac Asp gag Glu gaa Glu aat Asn tct Ser 325 gaa e Glu	992 1040 1088 1136
100 100 100 100 111 111 111 112 122 122	1 230 3 tto 4 Phe 5 acc 8 Thi 9 acc 2 Asi 5 aat 6 Asi 7 act 1 310 3 gga 4 Gl 5 aqa 7 aqa	c toace Med c toace to Ser toace to Ser toace to Lys	g gct t Ala a cag r Gli t gga aaa aaa g Gli a aaa y Lys	gac Asp gagt Ser 265 agat Asp gaga s Lys gaga gctg s Leu	ttg 250 250 250 250 250 250 260 260 260 260 260 260 260 260 260 26	235 cag Glm gag Glu gaa Glu aaa D Lys Gag Arg	aaaa Lys gac Asp gaa Ala Asp gag Glu Glu Arg	act Thr gga Gly cac His 285 atg Met Cag Cag Cln Cag	ggc Gly 270 gcc Ala Ctt Leu gtg Val	aac 255 tgc Cys ttc Phe Glu Asr aac Asr	Leur 240 g cag g c	Lys Jaaa J	a gat agat agat agat agat agat agat aga	gga o Gly a gao g Glu 275 c ago Sen) a aa E Lys g aa g Glu c ago Sen) c ago Sen) c ago Sen) c ago Sen) c ago Sen) c ago sen c ago sen c sen c ago sen c sen c sen c sen c sen c sen c sen c sen c sen c sen c sen c sen c c c sen c c c c c c c c c c c c c c c c c c c	a acay Through again Argonal A	Asp 245 gac Asp gag Glu gaa Glu aat Asn tct Ser 325 gaa e Glu	992 1040 1088 1136
100 100 100 100 111 111 111 112 122 122	1 230 3 ttc 3 ttc 4 Phe 5 7 acc 8 Thi 9 1 gac 2 Asi 1 310 3 gga 4 Gl 5 7 aga 8 Arg	c toace Med c toace to Ser toace to Ser toace to Lys	g gct t Ala a cag r Gli t gga aaa aaa g Gli a aaa y Lys	gac Asp gagt Ser 265 agat Asp gaga s Lys gaga gctg s Leu	ttg 250 250 250 250 250 250 250 250 250 250	235 cag Glm gag Glu gaa Glu aaa D Lys Gag Arg	aaaa Lys gac Asp gaa Ala Asp gag Glu Glu Arg	act Thr gga Gly cac His 285 atg Met Cag Cag Cln Cag	ggc Gly 270 gcc Ala Ctt Leu gtg Val	aac Lys 255 tgc Cys ttc Phe Glu Gac Asr aac Asr 335	Leur 240 g cag g c	Lys Jaaa J	a gat agat agat agat agat agat agat aga	gga o Gly a gao g Glu 275 c ago Sen) a aa E Lys g aa g Glu c ago Sen) c ago Sen) c ago Sen) c ago Sen) c ago Sen) c ago sen c ago sen c sen c ago sen c sen c sen c sen c sen c sen c sen c sen c sen c sen c sen c sen c c c sen c c c c c c c c c c c c c c c c c c c	a acay Thromas 260 gradual Argonal Arg	Asp 245 gac Asp gag Glu gaa Glu aat Asn tct Ser 325 gaa e Glu	992 1040 1088 1136

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268	225					230					235					240	•
271	Lys	Gln	Ser	Ile	Asp	Phe	Met	Ala	Asp	Leu	Gln	Lys	Thr	Arg	Lys	Gln	
272					245					250					255		
	Lys	Asp	Gly		Asp	Thr	Ser	Gln		Gly	Glu	Asp	Gly	_	Cys	Trp	,
276	_		_	260	_				265					270		_	
	Gln	Arg		Arg	Glu	Asp	Ser		Asp	Ala	Glu	Ala		Ala	Phe	Lys	
280	a	D	275	T	01	1	T	280	T	3	T	7	285	т	C1	n an	
	ser	290	ser	ьуs	GIU	ASI	LуS 295	Lys	ьуs	Asp	гуѕ	300	мес	ьeu	Glu	ASP	
284	Lvc		Lvc	Ser	Δen	Agn		Glu	Ara	Glu	Gln		Gln	Leu	Asp	Arσ	
	305	rne	пур	DET	USII	310	ыeu	GIU	ary	Jiu	315	JIU	0111	μcu	чэЬ	320	
		Val	Lvs	Glu	Ser		Glv	Lys	Leu	Thr		Ara	Leu	Val	Asn		
292			- 1 -		325	- 1	- 4			330	,	,			335		

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/687,230A

DATE: 07/11/2002
TIME: 13:27:28

Input Set : A:\EP.txt

Output Set: N:\CRF3\07112002\I687230A.raw

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295 Gln Cys Glu Phe Glu Arg Arg Lys Pro Asp Gly Thr Thr Thr Leu Gly
                                  345
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299 Leu Leu His Pro Val Asp Pro Ile Val Gly Glu Pro Gly Tyr Cys Leu
                              360
300 355
303 Val Arg Leu Gly Met Thr Thr Gly Arg Leu Gln Ser Gly Val Asn Thr
                           375
       370
307 Leu Gln Gly Phe Lys Glu Asp Lys Arg Asn Lys Val Thr Pro Val Leu
                       390
                                          395
311 Tyr Leu Asn Tyr Gly Pro Tyr Ser Ser Tyr Ala Pro His Tyr Asp Ser
                   405
                                      410
315 Thr Phe Ala Asn Ile Ser Lys Asp Asp Ser Asp Leu Ile Tyr Ser Thr
                                   425
               420
319 Tyr Gly Glu Asp Ser Asp Leu Pro Ser Asp Phe Ser Ile His Glu Phe
                                                  445
                               440
           435
323 Leu Ala Thr Cys Gln Asp Tyr Pro Tyr Val Met Ala Asp Ser Leu Leu
                          455
327 Asp Val Leu Thr Lys Gly Gly His Ser Arg Thr Leu Gln Glu Met Glu
                                          475
                      470
331 Met Ser Leu Pro Glu Asp Glu Gly His Thr Arg Thr Leu Asp Thr Gly
                                      490
     485
335 Lys Glu Met Glu Gln Ile Thr Glu Val Glu Pro Pro Gly Arg Leu Asp
                                  505
336 500
339 Ser Ser Thr Gln Asp Arg Leu Ile Ala Leu Lys Ala Val Thr Asn Phe
                               520
          515
343 Gly Val Pro Val Glu Val Phe Asp Ser Glu Glu Ala Glu Ile Phe Gln
                                               540
                           535
       530
347 Lys Lys Leu Asp Glu Thr Thr Arg Leu Leu Arg Glu Leu Gln Glu Ala
                                           555
                       550
351 Gln Asn Glu Arg Leu Ser Thr Arg Pro Pro Gly Asn Met Ile Cys Leu
                                       570
                   565
355 Leu Gly Pro Ser Ser Glu Lys Cys Ile Leu Leu Asn Lys
     580
359 <210> SEQ ID NO: 3
360 <211> LENGTH: 27
361 <212> TYPE: DNA
362 <213> ORGANISM: Artificial Sequence
364 <220> FEATURE:
365 <223> OTHER INFORMATION: PI3 Kinase associated protein (PIKAP)
367 <400> SEQUENCE: 3
368 ccggggatcc ccatggctag ccatatg
```

27

VERIFICATION SUMMARY

DATE: 07/11/2002

PATENT APPLICATION: US/09/687,230A

TIME: 13:27:29

Input Set : A:\EP.txt